

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended): A method for the interconnection of active components and passive components provided with terminals for their interconnection, comprising the steps of:

positioning and fixing the active and passive components on a flat support, the terminals being in contact with the support,

depositing a polymer layer on all of the support and the components,

removing the support,

redistributing the terminals between the components and/or toward the periphery by means of metal conductors arranged in a predetermined layout, to obtain a reconstituted heterogeneous structure,

~~heterogeneously~~ thinning the structure by nonselective surface treatment of the polymer layer and at least one passive component.

2. (Currently Amended): The method as claimed in claim 1, comprising a step of rectifying and pre-thinning the polymer layer prior to the step of redistributing the terminals, to calibrate the thickness of the layer to a predetermined value and render the surface of said layer substantially flat and parallel to the support.

3. (Currently Amended): The method as claimed in claim 2, wherein said rectifying and pre-thinning step comprises ~~a first step of heterogeneously~~ thinning the layer by nonselective surface treatment of the polymer layer and the passive component.

4. (Previously Presented): The method as claimed in claim 1, wherein the surface treatment is carried out by nonselectively lapping and polishing the polymer layer and the components.

5. (Previously Presented): The method as claimed in claim 1, wherein the support includes an adhesive film and the removal is carried out by peeling the film.

6. (Previously Presented): The method as claimed in claim 1, wherein said redistributing of the terminals step comprises depositing a photo-etchable insulating layer, etching said layer in a pattern corresponding to the positioning of the terminals, depositing a metal layer and etching said metal layer according to the predetermined layout of the metal conductors.

7. (Previously Presented): The method as claimed in claim 1, comprising a prior step of thinning the passive components.

8. (Previously Presented): The method as claimed in claim 7, wherein, the passive component is a ceramic capacitor with a zone of even and odd interdigitated electrodes, two ceramic filling zones on either side of the electrode zone and two lateral end terminals to which the even and odd electrodes are respectively connected, the prior thinning step consists in thinning one of said ceramic zones in a plane parallel to the electrodes.

9. (Previously Presented): The method as claimed in claim 7, wherein, the passive component is a ceramic capacitor with a zone of even and odd interdigitated electrodes, two ceramic filling zones on either side of the electrode zone and two lateral end terminals to which the even and odd electrodes are respectively connected, the prior thinning step consists in thinning on one of its faces perpendicular to the plane of the electrodes.

10. (Previously Presented): The method as claimed in claim 7, wherein, the passive component is a resistor or an inductor with an inert substrate, an active layer on one face of said substrate and conductive terminals enclosing the side faces of the component on either side of the active layer, the prior thinning step includes thinning said substrate, the face bearing the active layer being next to the support during the positioning of the passive components on the support.

11. (Previously Presented): The method as claimed in claim 1, wherein, the passive component is a MEMS with a sensitive part in contact with metal contacts and etched in a substrate, comprising:

positioning and fixing said substrate on the support via an interface with two faces having a first and second metal contact which are connected together and respectively placed on the face next to the support on which the interface is fixed and on the opposite face, said second contact being connected to the metal terminals of the substrate by connecting wires,

positioning and fixing a protective cover of the MEMS on the support.

12. (Previously Presented): The method as claimed in claim 1, wherein, the active and passive components being arranged on the support in order to form a set of identical patterns, furthermore comprising cutting the thinned heterogeneous structure around said patterns, to obtain a corresponding number of identical thinned heterogeneous elementary components.

13. (Previously Presented): A method for the three-dimensional interconnection of active and passive components provided with terminals for their interconnection, comprising the steps of :

producing thinned heterogeneous elementary components by the method as claimed in claim 12, the terminals being redistributed in particular toward the periphery, stacking and bonding the heterogeneous components, coating the stack with the aid of a polymer material,

cutting the material to form, around said stack, a parallelepipedal block whose faces will expose the peripheral contacts of the active and passive components, depositing a metallization layer on at least a part of the faces, forming an interconnection network of the conductors by laser etching the metallization layer on the faces of the block.

14. (Previously Presented): A thinned heterogeneous component, comprising:

a polymer layer having two substantially plane and parallel surfaces with one polished face and one unpolished face and, coated in said layer, an active component and one passive component, the components having two faces, a first face provided with terminals for interconnection of the components, the terminals of the set of components being connected by metal conductors forming a flat support in contact with the unpolished surface of said layer, and a second face, said second faces of the set of passive components being polished so as to form a plane surface homogeneous with said plane surface of the polymer layer.

15. (Previously Presented): A three-dimensional thinned heterogeneous component comprising two thinned heterogeneous components as claimed in claim 14 stacked on one another, separated by a layer and having conductors connected to the terminals of the active and passive components of each of the heterogeneous components and extending to the faces of the stack, and connections arranged on the faces of the stack for interconnection of the conductors.

16. (Previously Presented): The three-dimensional thinned heterogeneous component as claimed in claim 15, wherein said layers are anisotropic conductive films and one or more of said thinned heterogeneous components comprise passive components of the connecting wire type for connecting said thinned heterogeneous components to other stacked thinned heterogeneous components.

17. (Currently Amended): A method for the three-dimensional interconnection of active and passive components provided with terminals for their interconnection, comprising:

positioning and fixing, on a plane support, at least one passive component and a first active component, the terminals being in contact with the support, and a terminal adapter, said adapter having metal contacts on two faces which are connected to each other, one of the faces being in contact with said support and the other face lying on the other side,

stacking and bonding a second active component on said first active component, the terminals of said second component being on the opposite face from that in contact with the first component,

forming connections by connecting wires between the terminals of the second component and the contacts of the adapter,

depositing a polymer layer on all of the support and said components,

removing the support,

redistributing the terminals between the components and/or toward the periphery by means of metal conductors, making it possible to obtain a reconstituted heterogeneous structure,

~~heterogeneously~~ thinning said structure by nonselective surface treatment of the polymer layer and the passive components.

18. (Previously Presented): The method as claimed in claim 17, comprising: stacking and bonding at least one other active component on said second active component, the terminals of each further component being on the opposite face from that in contact with the lower component, and forming connections by connecting wires between the terminals of each further component and the contacts of the adapter or the terminals of the lower component.